

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No. : **09/472,134**
Inventor : **GIROUARD, Bruno et al.**
Title : **"Snowmobile"**
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**DECLARATION UNDER 37 C.F.R. §1.132
OF
JEAN-YVES LEBLANC**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Jean-Yves Leblanc, hereby declare that:

Personal Information of Declarant

[0001] I am the Director of Intellectual Property and Product Safety for Bombardier Recreational Products Inc. (hereinafter "BRP"), the assignee of the above-identified application.

[0002] BRP is a divestiture of Bombardier Inc., the previous assignee of the above-identified application.

[0003] I have read and understand the above-identified patent application, including the pending claims.

[0004] I have read and understand the following documents: Yasui et al. (U.S. Patent 4,848,503); Yasui '164 (U.S. Patent 4,892,164); Karpik (U.S. Patent 5,370,198); Marier et al. (U.S. Patent 5,660,245); Girouard et al. (Canadian Patent Application 2,256,944); "The seated man (Homo Sedens) The seated work position. Theory and practice" by A.C. Mandal ("Mandal"); and "The Complete Snowmobile Repair Handbook" by Paul Dempsey ("Dempsey"). In the case of Mandal and Dempsey, I have read only the portions of these documents provided by the United States Patent and Trademark Office.

[0005] Before working for BRP, I was the Director of Quality and Operations for Bombardier-Nordtrac Oy, a wholly owned subsidiary of BRP, from November, 2002 to October, 2005. Bombardier-Nordtrac Oy designs, manufactures and sells snowmobiles.

[0006] Before working for Bombardier-Nordtrac Oy in November, 2002, I worked for Bombardier Inc.'s Recreational Products division from November, 1992 to October, 2002.

[0007] I was the Director of Engineering and Research and Development for snowmobiles from November, 1992, to April, 2000.

[0008] I was the Director, Product Safety Engineering from May, 2000 to October, 2002.

Canadian Patent Application No. 2,256,944 ("the '944 Application")

[0009] The '944 Application states on page 9 that the snowmobile frame (10) has a tunnel area (27). If a person skilled in the art were to construct the the frame (10) and tunnel (27) shown in Figure 11 for use in a snowmobile, they would inevitably be made of bent sheet metal.

[0010] In particular, the frame (10) and tunnel (27) are in the shape of thin sheets of material that meet at right angles and have an embossed portion (best seen in Figure 12) surrounding the hole through which the crankshaft 45 can be seen in Figure 20. A person skilled in the art of snowmobile design would immediately understand that the only practical way to produce a frame of this shape, with sufficient structural rigidity and sufficiently light weight to be practical a snowmobile, is to stamp or bend a piece of sheet metal into the desired shape.

[0011] While it is known that the tunnel (27) shown in Figure 11 could be made with one of a number of suitable metals, such as steel or aluminum, it is also known that it would not be made of any material other than metal, such as plastics or composites. Plastics and composites do not allow the tunnel to be rigid enough and thin enough for use in a snowmobile, where both size

and strength are significant design considerations. To my knowledge, no production snowmobile has ever been manufactured with a frame having a tunnel made of plastic, composite, or any material other than sheet metal.

[0012] Therefore, a person skilled in the art would understand the '944 application, in particular page 9 and the tunnel (27) thereof, to disclose a tunnel made of bent sheet metal.

US Patent No. 4,848,503 (Yasui)

[0013] As I understand it, Yasui describes a "small snowmobile" designed to be smaller and lighter than conventional snowmobiles that existed at that time.

[0014] At lines 28-35 of column 2 of Yasui, Yasui describes the frame of its snowmobile as "the welded up tubular type", and states that this frame is described in more detail in U.S. Patent Application No. 163,389, which Yasui incorporates by reference and which issued as U.S. Patent No. 4,892,164 (hereinafter "Yasui '164").

[0015] At lines 15-18 of column 1 of Yasui '164, Yasui '164 describes "conventional snowmobiles" as having "a combined body frame structure that is made up of a plurality of steel stampings that are welded together." I understand this to mean that conventional snowmobile frames according to Yasui '164 are made of sheet metal that is bent by the stamping process. Sheet metal is the form of metal commonly used to make snowmobile frames because it is thin enough to be relatively lightweight and to be shaped by stamping or other means.

[0016] At lines 18-25 of column 1 of Yasui '164, Yasui '164 states that bent sheet metal frames "require substantial weight", "the necessity of using several different stampings and welding them together adds to the cost of the overall assembly" and "such welded up construction made it difficult to position the driving components of the snowmobile in such a way that the snowmobile can be conveniently serviced". I understand this to mean that bent sheet metal frames are unsuitable for use in the snowmobile frame of Yasui '164, which is used in the snowmobile of Yasui, because of these perceived drawbacks.

[0017] The motivation to reduce the weight of snowmobiles has been a primary design consideration for snowmobile manufacturing since their introduction in the marketplace. Yasui does not provide a general motivation to reduce the weight of a snowmobile. Yasui provides a motivation to reduce the weight of a snowmobile specifically by removing the sheet metal frame

from a conventional snowmobile and replacing it with an alternative frame design. In particular, it was known at the time of Yasui that aluminum or other metals could be substituted for steel in the tunnel of a snowmobile, and that an appropriate choice of metal would result in a reduced weight vehicle. Yasui proposes a more complex solution than substituting a lighter material, namely redesigning the entire frame to include no sheet metal at all. I understand from this that Yasui considers a tunnel made of aluminum or other sheet metals to be unacceptable or inadequate to achieve the stated purpose. I understand Yasui to specifically teach not using a frame made of bent sheet metal in a snowmobile.

[0018] At lines 35-36 of column 2 of Yasui '164, Yasui '164 states that its "snowmobile ... is comprised of a frame assembly ... which is of the tubular welded up type ..." I understand this to mean that Yasui solves the problem of a heavy sheet metal frame by substituting therefor a tubular frame. A bent sheet metal frame would defeat the stated objective of Yasui to have a vehicle smaller and lighter than snowmobiles having bent sheet metal frames, and it would defeat the method used by Yasui to achieve this objective, namely by providing a tubular frame instead of a sheet metal frame. Therefore, modifying the vehicle of Yasui to include a bent sheet metal frame would be contrary to the express teaching of Yasui.

[0019] A sheet metal frame made of a more lightweight material than steel, such as aluminum, would still defeat the stated objectives of Yasui. While aluminum is lighter than steel, a bent sheet aluminum frame still adds significant weight to the snowmobile. In addition, a bent sheet aluminum frame would still not address the stated problems of Yasui that such frames add to the cost of the overall assembly and make it difficult to position the driving components of the snowmobile in such a way that the snowmobile can be conveniently serviced. To the extent that stamped steel frames in conventional snowmobiles have these problems, they are independent of the material composition of the frame and would not be remedied by building the same frame from a different material. Therefore, modifying the vehicle of Yasui to include a bent sheet aluminum frame would be contrary to the express teaching of Yasui. Specifically, I understand from Yasui that the snowmobile of Yasui should not be modified to include a tunnel made of bent sheet metal such as the one described in U.S. Patent No. 5,660,245 (Marier).

[0020] In addition, Yasui does not motivate adding a tunnel made of bent sheet metal in order to create a barrier between the track of the vehicle and the rider. Yasui already provides a barrier

between the track and the rider, by the combination of the body 13 and the seat 14. The body 13 of Yasui is made of molded fiberglass, a very lightweight material. I understand that Yasui cannot be modified to add a bent sheet metal barrier between the track and the rider, or to construct the body 13 of Yasui using sheet metal instead of molded fiberglass, without defeating the teaching of Yasui that a sheet metal tunnel is to be avoided.

[0021] I understand the term “conventional snowmobile” in the above-identified application to be a snowmobile having a frame made with bent sheet metal and not the tubular frame described in Yasui ‘164. To my knowledge, all production snowmobiles since at least as early as 1998 have included a tunnel made of bent sheet metal. To my knowledge, there have been no production snowmobiles since at least 1998 having a tubular frame as described in Yasui ‘164.

[0022] Paragraph [0004] of the present application as published describes a “conventional snowmobile”. This paragraph states that the center of gravity of a conventional snowmobile “is located at or in proximity to the axis of the forward-most axle of the drive track.” As I understand this statement, it does not apply to the snowmobile of Yasui. The snowmobile of Yasui differs in a number of respects from conventional snowmobiles. In particular, the snowmobile of Yasui has a tubular frame and not a bent sheet metal frame. In addition, the snowmobile of Yasui is smaller than a conventional snowmobile and differently-proportioned. The engine is situated farther forward in Yasui than in a conventional snowmobile. As a result of the smaller size and tubular frame of Yasui, the engine of Yasui comprises a larger proportion of the total mass of the vehicle. Each of these differences shifts the center of gravity of Yasui closer to the front end of the vehicle than the location it would normally occupy in a conventional snowmobile. I understand that Yasui would have a center of gravity farther forward than that of a “conventional snowmobile” as disclosed. Therefore, the location of the center of gravity of a snowmobile disclosed in paragraph [0004] of the application does not refer to Yasui, which does not disclose a conventional snowmobile. I do not understand paragraph [0004] of the application to make any representation about the location of the center of gravity of Yasui, because Yasui is not the type of vehicle being described, namely a “conventional snowmobile”.

A.C. Mandal, "The seated man (Homo Sedens)"

[0023] As I understand it, Mandal addresses problems that are experienced by people sitting in the same posture for long periods of time. For example, Mandal states on page 19 the basic premise that

Each day people sit for many hours hunched over their tables in postures extremely harmful to the back.

[0024] Mandal's stated approach to addressing this problem, on page 20, is that school children

should be allowed to determine to a large degree what is best for them. After all, they are the ones who have to sit painfully for 4-5 h each day.

[0025] Mandal further emphasizes on page 25 that

it is important to feel one's way forward to methods that the pupils can accept – in other words use for hours.

[0026] The act of riding a snowmobile is very different from a student sitting in one position for hours in a chair. A snowmobile rider does not sit in the same posture for long periods of time. A snowmobile rider changes positions frequently while operating a snowmobile. Some of the typical positions assumed by a rider while operating a snowmobile are discussed on pages 50-51 of Dempsey.

[0027] Referring to page 50 of Dempsey, a sitting position of the rider is described. It is well known that the rider typically will not maintain a constant posture in the sitting position throughout his use of the snowmobile.

[0028] Pages 50-51 of Dempsey also describe a kneeling position, in which the driver can raise his center of gravity relative to the sitting position. In the kneeling position, the driver can shift his weight to keep the snowmobile track in contact with the snow. In this position, the driver can also shift his weight to help steer the snowmobile. This is possible because, unlike the driver of a car, the weight of a snowmobile rider is comparable to the weight of the vehicle. Thus, the positioning of the rider's weight has a significant impact on the steering and handling of the snowmobile, and the rider must frequently shift his position while operating the snowmobile, for example by leaning into turns while steering the snowmobile, to ensure proper control of the snowmobile.

[0029] As described on page 51 of Dempsey, the rider of a snowmobile raises himself above the straddle seat in a standing position from time to time. In this position, the rider can flex his knees to absorb the shock when the snowmobile travels over bumps. In addition, if the snowmobile becomes airborne a rider in the standing position can shift his weight to adjust the orientation of the snowmobile in mid air so that the track touches down before the skis.

[0030] As described on page 51 of Dempsey, “the machine will become an extension of your body” when ridden in this manner. The rider of a snowmobile frequently manipulates his body to better control the movements of the snowmobile. This technique is known as “active riding”. In addition, the rider of a snowmobile moves his arms and his upper body to manipulate the handlebars of the snowmobile in order to steer the snowmobile. The rider of a snowmobile therefore does not spend a significant length of time seated in a single position with an unchanging posture like the students in Mandal, and does not encounter the same problems that Mandal attempts to solve.

[0031] When designing a snowmobile, in particular configuring the seating position of a rider on a snowmobile, my primary concern is to make it convenient for the rider to actively ride the snowmobile by standing up and shifting his weight, and not to ensure that a rider will be comfortable while sitting still on the snowmobile with an unchanging posture for extended periods of time. I know that the rider will not sit in the same position, with an unchanged posture, throughout his use of the vehicle, so ensuring that a particular posture is comfortable to maintain for long periods is not a factor that I would take into account. Therefore, I would have no reason to apply the teachings of Mandal to the design of a snowmobile, because Mandal does not address a situation that snowmobile designers see as a problem or attempt to remedy.

[0032] In addition, the discussion of horseback riding on page 26 of Mandal does not suggest to a person skilled in the art of snowmobile design that the teachings of Mandal could be applied to snowmobiles. Horseback riding is different from snowmobile riding, and a person skilled in snowmobile design would not be motivated to consult literature about horseback riding posture in configuring the seating position on a snowmobile. In particular, a person does not actively ride a horse by shifting his weight to steer the horse. In addition, unlike a snowmobile rider, a horseback rider has no fixed hand or feet position because he has his hands on flexible reins and

his feet in stirrups that are free to swing back and forth. Therefore, the posture of a horseback rider is of no interest to a person configuring the seating position of a rider on a snowmobile.

[0033] To my knowledge, the seating positions disclosed in Mandal have never been implemented in any commercially available snowmobile.

Paul Dempsey, "The Complete Snowmobile Repair Handbook"

[0034] Dempsey was published in 1974. The weight of snowmobiles has changed significantly since 1974, due to advances in snowmobile technology and changes in snowmobile design.

[0035] In particular, major changes have been made to the front and rear suspension systems of the snowmobile, engines have gotten heavier and more powerful, and the steel frames that were commonplace in 1974 have been replaced by lighter aluminum frames. The widths of the skis and the track have been changed. In addition, it is generally desirable to minimize the weight of a snowmobile, so the overall weight of the vehicle is continually decreased as technology permits. All of these changes have had significant impact on the overall weight of the snowmobile. Therefore, a person skilled in the art of snowmobile design would understand that Dempsey does not teach the weight of a snowmobile either in 1989 or today, and that a snowmobile designed in 1989, such as Yasui, would not have the same weight as a snowmobile in 1974.

[0036] In addition, even if Dempsey could be said to disclose the weight of a standard snowmobile at the time Yasui was published, Dempsey could not be used to determine the center of gravity of Yasui. A number of changes in snowmobile design between 1974 and 1989 have resulted in a redistribution of the weight of the vehicle. In particular, the relative locations of the engine and the fuel tank have been reversed. The relocation of these two major sources of weight has resulted in a shift of the center of gravity of the snowmobile. Therefore, it is inappropriate to use the weight of a snowmobile disclosed in Dempsey to determine the center of gravity of Yasui.

[0037] In addition, even if Dempsey could be said to disclose the weight of a standard snowmobile, this weight could not be applied to Yasui to calculate the center of gravity of the snowmobile of Yasui with a rider. Yasui describes "a smaller lighter machine" compared to the

“large and heavy machines” commonly sold at the time. Therefore, the weight of Yasui would be less than a standard snowmobile weight disclosed at or before the time of Yasui.

Conclusion

[0038] I hereby declare that all statements made herein of my knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statement and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code and that such willful false statement may jeopardize the validity of the application or any patents issued from them.

BY: 
Jean-Yves Leblanc

Date: Aug 14, 2007